

# Source Water Assessment Program (SWAP) Report

## For

### Liberty House Condominium



Prepared by the  
Massachusetts Department of  
Environmental Protection,  
Bureau of Resource Protection,  
Drinking Water Program  
Prepared:  
November 13, 2000

**Table 1: Public Water System (PWS) Information**

<i>PWS NAME</i>	Liberty House Condominium
<i>PWS Address</i>	Liberty Square Road
<i>City/Town</i>	Boxborough
<i>PWS ID Number</i>	2037014
<i>Local Contact</i>	Mark Brooks
<i>Phone Number</i>	(978) 635-9018

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #2	2037014-02G	180	476	Moderate

#### What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? inventory land uses within the recharge areas of all public water supply sources;
- ? assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? publicize the results to provide support for improved protection.

#### SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

## INTRODUCTION

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

#### Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

#### This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

## 1. Description of the Water System

Liberty House Condominium obtains its water from a well located in the woods west of the buildings. The well has a Zone I of 180 feet and an Interim Wellhead Protection Area (IWPA) of 476 feet. The well was drilled to a depth of 190 feet, within a granite formation. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

The well serving the facility is treated with a water softener. For current information on monitoring results and treatment, and for a copy of the most recent Consumer Confidence Report please contact the Public Water System contact person listed above in Table 1.

### What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

### What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

## 2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

**Key issues include:**

1. **Septic systems within the IWPA;**
2. **Transportation corridor within the IWPA; and**
3. **Aquatic wildlife in stream.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Septic systems** – There are a few septic systems located within the IWPA of the well. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply.

**Recommendation:**

- ✓ Encourage participation in the Town of Boxborough Household Hazardous Waste collection to discard of spent chemicals.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

2. **Transportation Corridor** – Massachusetts Avenue is located within the IWPA. Major roads are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.

**Recommendation:**

- ✓ Contact local fire department to ensure that the IWPA is included in Emergency Response Planning.

3. **Aquatic Wildlife** – The well is located near a stream that runs through the IWPA. Duck and other wildlife waste in and around the stream is a potential source of contamination to the water supply.

**Table 2: Table of Activities within the Water Supply Protection Areas**

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Residential	Transportation Corridor	No	Yes	Moderate	Limit road salt usage and provide drainage away from wells
	Septic System	No	Yes	Moderate	See septic systems brochure in the appendix
	Aquatic wildlife	Yes	Yes	Low	Microbial contamination

\* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/).

## Glossary

**Zone I:** The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

**IWPA:** A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

**Zone II:** The primary recharge area defined by a hydrogeologic study.

**Aquifer:** An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

**Hydrogeologic Barrier:** An underground layer of impermeable material that resists penetration by water.

**Recharge Area:** The surface area that contributes water to a well.

## Recommendation:

- ✓ Discourage wildlife by prohibiting the feeding of ducks or other wildlife.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

## 3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. Liberty House Condominiums is commended for having a Zone I that meets DEP criteria and that contains no potential sources of contamination. Liberty House Condominiums should review and adopt the following recommendations at the condominium complex:

### Zone I:

- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism.

### Training and Education:

- ✓ Instruct residents on proper hazardous material storage and use, disposal of spent household chemicals, emergency response, and best management practices; include custodial staff, and groundskeepers.

### Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.

### Planning:

- ✓ Work with local officials in Boxborough to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.

- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

## 4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet

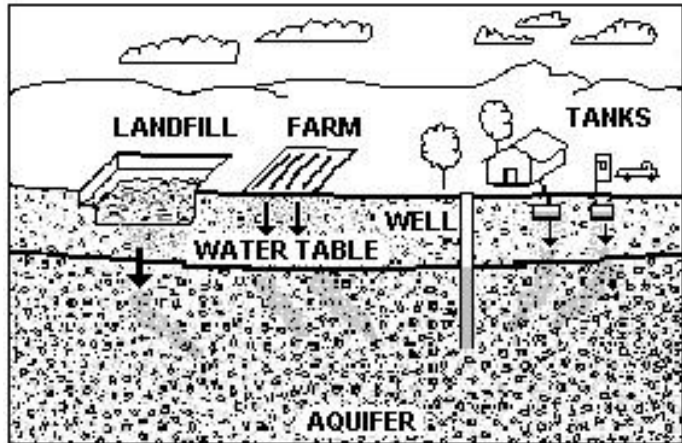


Figure 1: Example of how a well could become contaminated by different land uses and activities.

**For More Information:**

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 5030** for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at:  
[www.state.ma.us/dep/brp/dws](http://www.state.ma.us/dep/brp/dws).

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

**Additional Documents:**

To help with source protection efforts, more information is available by request or online at [www.state.ma.us/dep/brp/dws](http://www.state.ma.us/dep/brp/dws), including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

